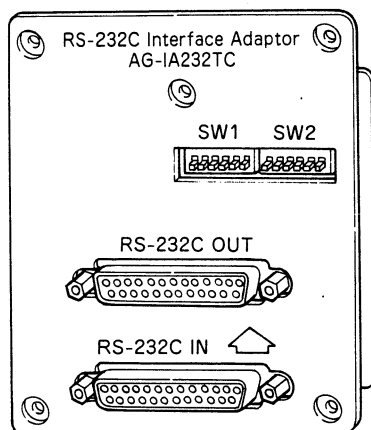


Service Manual

Panasonic

Operating Instructions
Block Diagram
Schematic Diagrams &
Circuit Board Diagrams
Exploded View &
Replacement Parts Lists

RS-232C Interface Adaptor
AG-IA232TC-E



SPECIFICATIONS

ITEM	SPECIFICATIONS
Operating humidity	35% to 80%
Operating temperature	5°C to 40°C (41°F to 104°F)
Dimensions	82mm × 100mm × 28mm (3-1/4" × 3-15/16" × 1-1/8")
Weight	Approx. 140g (0.3 lbs)

Weight and dimensions shown are approximate.
Specifications are to change without notice.

Panasonic

INTRODUCTION

This service manual contains technical information which will allow service personnels to understand and service the RS-232C Interface Adaptor.

By installing this interface adaptor in an AG-7350, AG-7150 or AG-7355 VTR, the VTR can be controlled by a personal computer, for example, via an RS-232C communications interface.

CONTENTS

1. OPERATING INSTRUCTIONS.....	1
2. RS-232C Interface/Time Code Block Diagram.	BLK-1
3. A (RS-232C Interface) Schematic Diagram.	SCM-1
4. A (RS-232C Interface) C.B.A. (VEP6619A : NTSC), (VEP6619B : PAL)	SCM-2
5. B (Time Code) C.B.A. (VEP66200A : NTSC), (VEP66200B : PAL)	SCM-3
6. B (Time Code) Schematic Diagram.	SCM-4
7. EXPLODED VIEWS.....	PARTS-1
8. ELECTRICAL REPLACEMENT PARTS LIST	PARTS-1

Operating Instructions

Installation

Remove the 34P interface adaptor installed on the VTR.

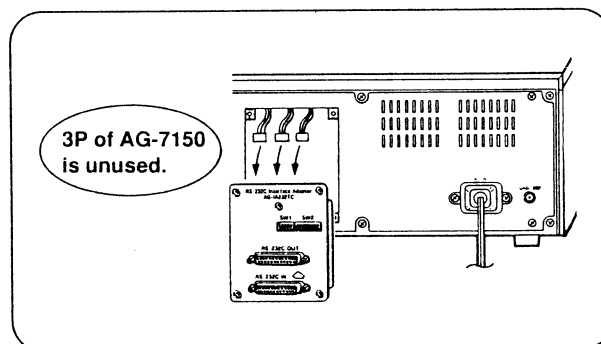
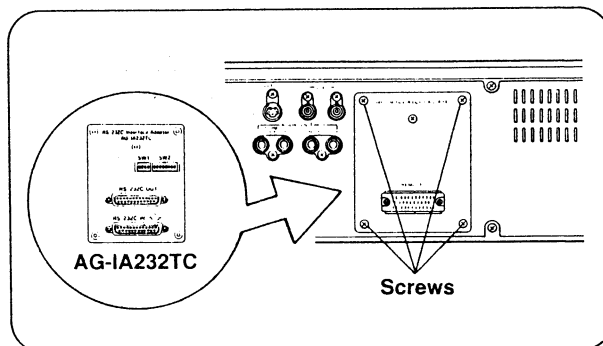
- Remove the four screws indicated in the figure at right.

Install the interface adaptor using the removed screws.

Precaution

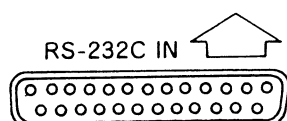
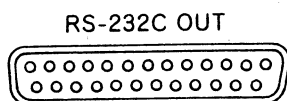
When installing the adaptor, be sure to insert the VTR cable into the interface adaptor, as shown in the figure at right.

- When using the AG-7150, be sure to insert 10P and 4P only. 3P is unused.



Connector signals (25P)

- RS-232C Input/Output Connector
Connect the input from a personal computer (or RS-232C output from another VTR) to the RS-232C input connector. Use RS-232C straight (normal) cable.

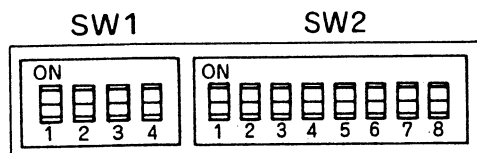


Pin No.	Signal name	Pin No.	Signal name
1	GND	6	Shorted to 20
2	TXD	7	GND
3	RXD	8~19	—
4	Shorted to 5	20	Shorted to 6
5	Shorted to 4	21~25	—

Description of DIP switches

SW1

Used to set the RS-232C communications conditions. Set the DIP switches according to the conditions attendant to the personal computer to be connected to the VTR.



■ BIT LENGTH

	7 BIT	8 BIT
SW1	OFF	ON

■ STOP BIT

	STOP 1	STOP 2
SW2	OFF	ON

■ BAUD RATE

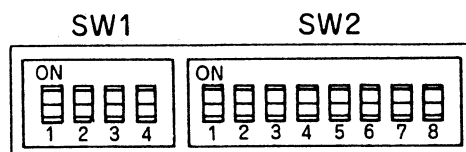
	1200	2400	9600	19200
SW5	OFF	ON	OFF	ON
SW6	OFF	OFF	ON	ON

■ PARITY

	ODD	EVEN	NONE	NONE
SW3	OFF	ON	OFF	ON
SW4	OFF	OFF	ON	ON

SW2

Used to set the addresses and switch the time code output when performing loop-through. Do not set the addresses for mutually connected VTRs to the same value.



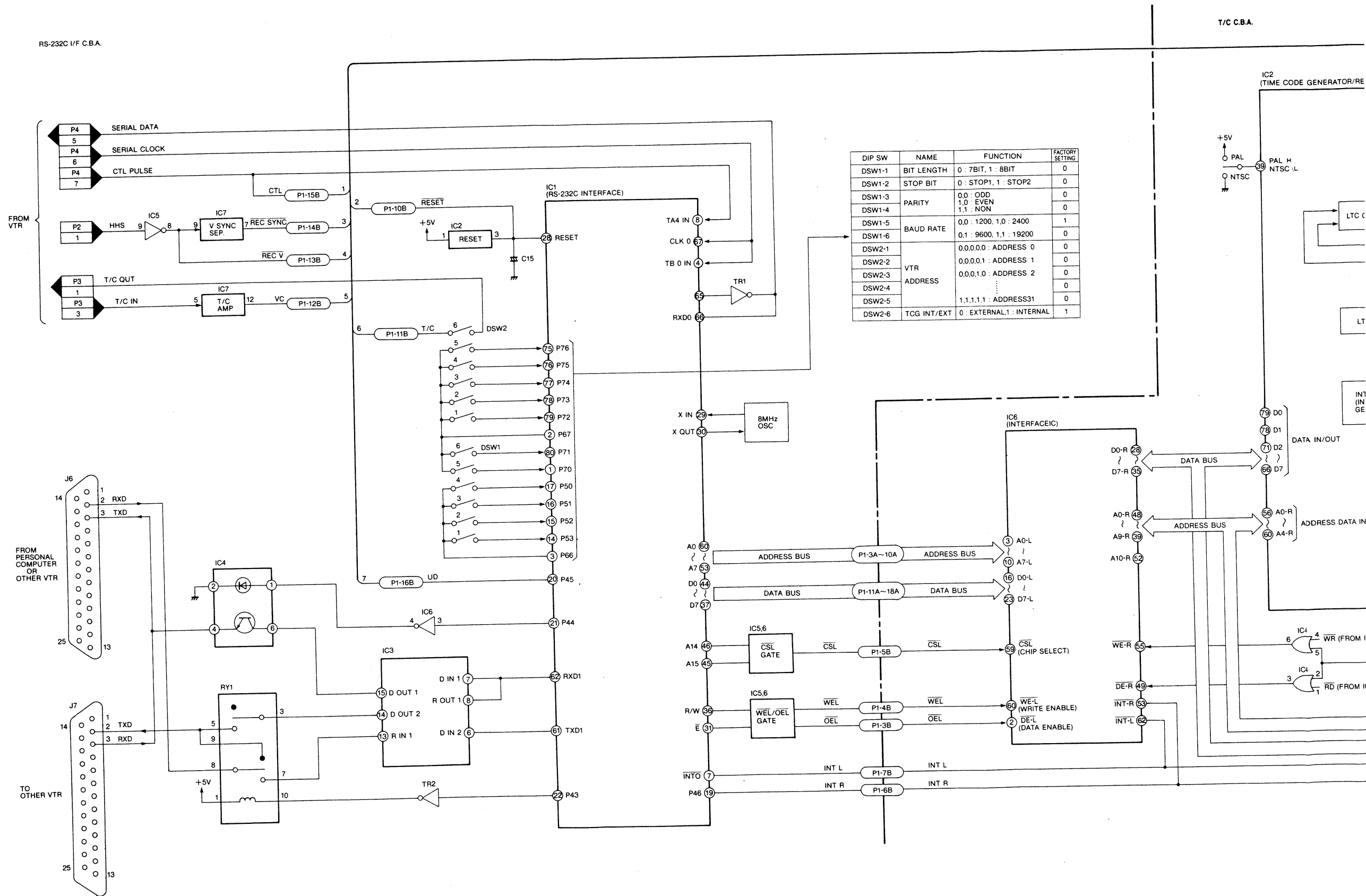
■ ADDRESS

	SW1	SW2	SW3	SW4	SW5
ADDRESS 0	OFF	OFF	OFF	OFF	OFF
ADDRESS 1	ON	OFF	OFF	OFF	OFF
ADDRESS 2	OFF	ON	OFF	OFF	OFF
⋮	⋮				
ADDRESS 10	OFF	ON	OFF	ON	OFF
⋮	⋮				
ADDRESS 15	ON	ON	ON	ON	OFF
⋮	⋮				
ADDRESS 20	OFF	OFF	ON	OFF	ON
⋮	⋮				
ADDRESS 25	ON	OFF	OFF	ON	ON
⋮	⋮				
ADDRESS 30	OFF	ON	ON	ON	ON
ADDRESS 31	ON	ON	ON	ON	ON

■ TCG INT/EXT

	EXT	INT
SW6	OFF	ON

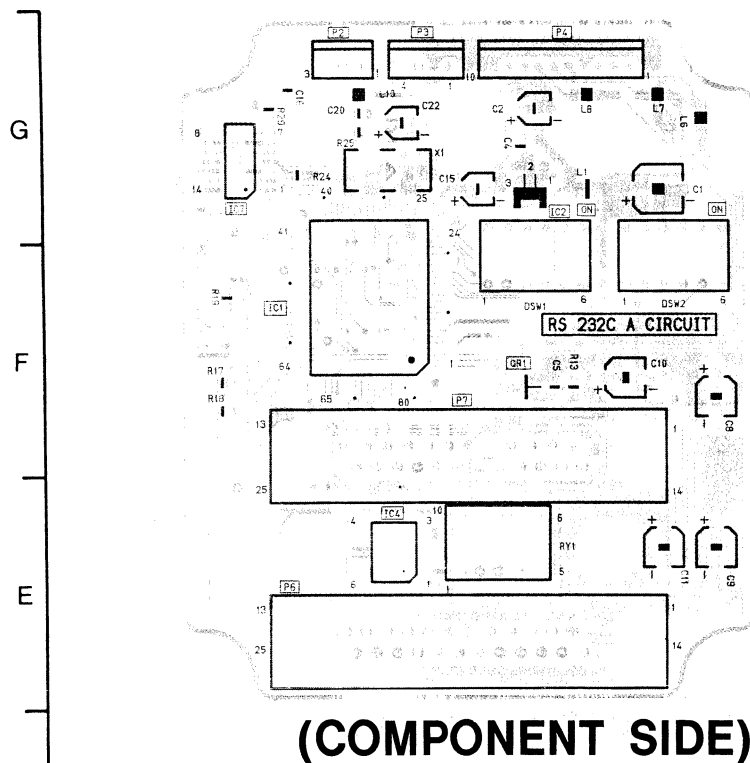
RS-232C Interface/Time Code Block Diagram





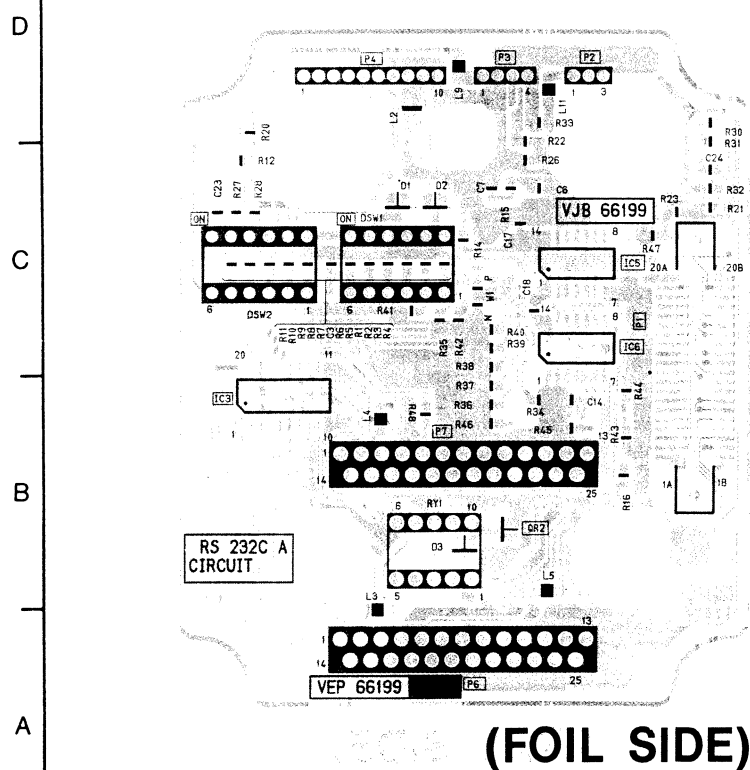


A (RS-232C Interface) C.B.A.(VEP66199A : NTSC) (VEP66199B : PAL)

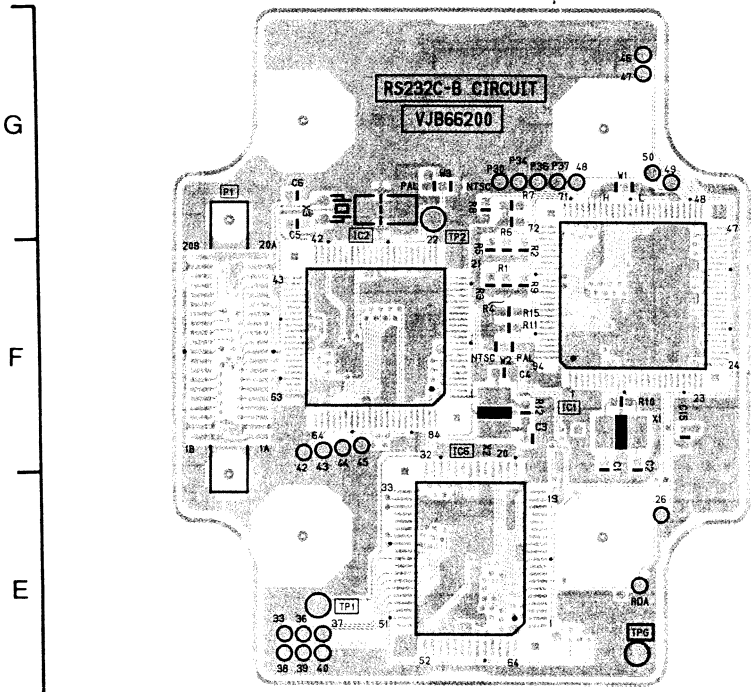


A(RS-232C Interface) P.C. BOARD

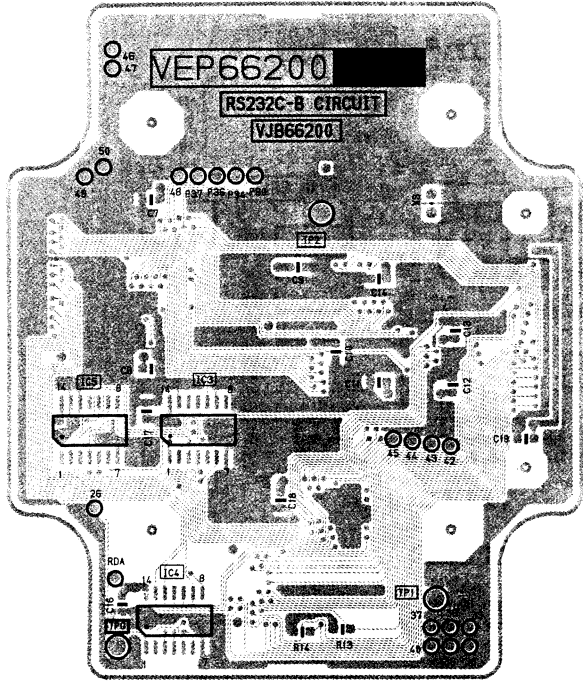
COMPONENT SIDE		FOIL SIDE	
Integrated Circuit		Integrated Circuits	
IC1	F-2	IC3	B-1
IC2	G-3	IC5	C-3
IC4	B-2	IC6	C-3
IC7	G-1		
Others		Others	
P2	G-2	P1	C-3
P3	G-2	P2	D-3
P4	G-3	P3	D-2
P6	E-1	P4	D-2
P7	F-2	P7	B-2
Switches		Switches	
DSW1	F-3	DSW1	F-3
DSW2	F-3	DSW2	F-3



B (Time Code) C.B.A.(VEP66200A:NTSC) (VEP66200B:PAL)



(COMPONENT SIDE)

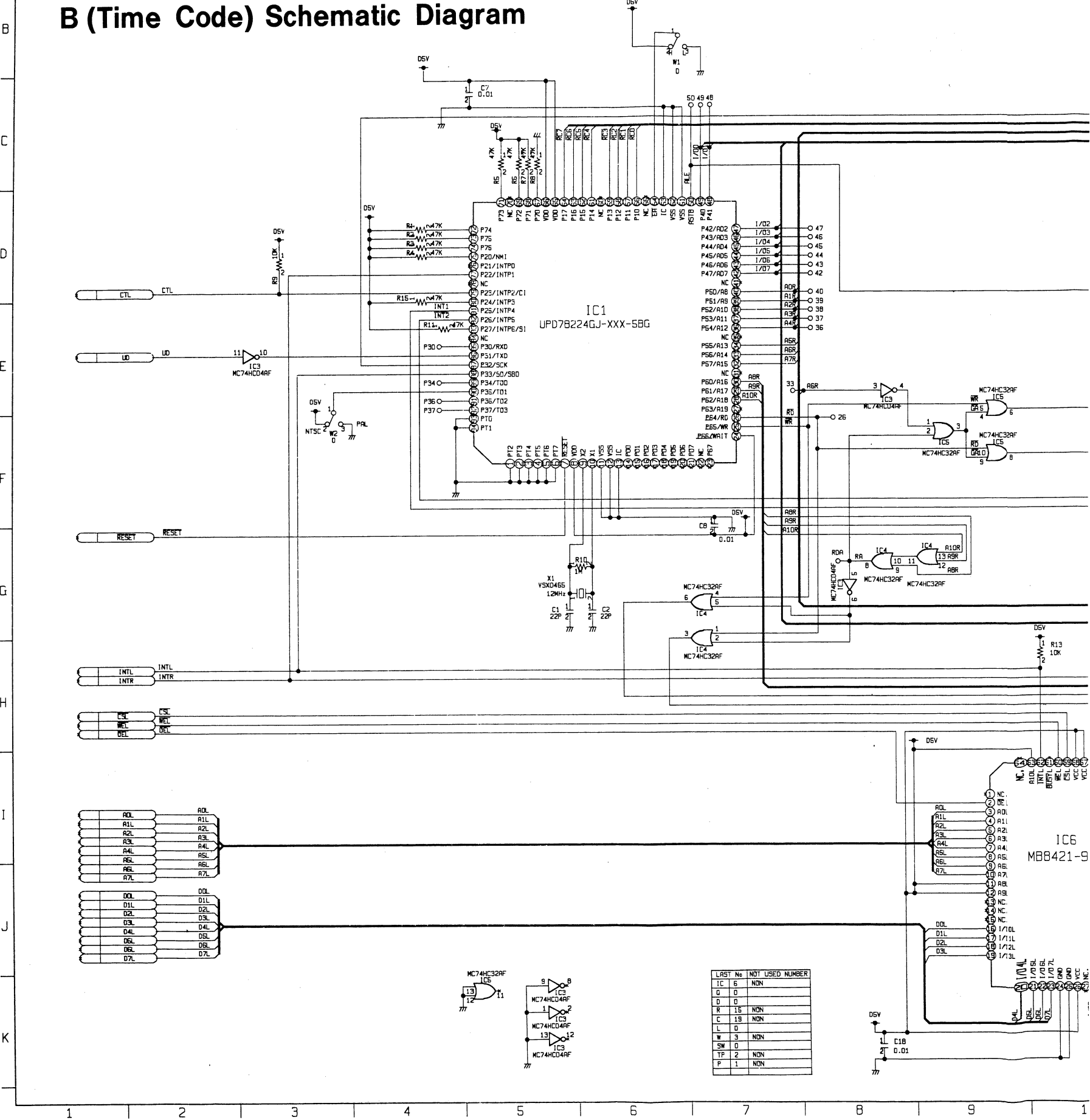


(FOIL SIDE)

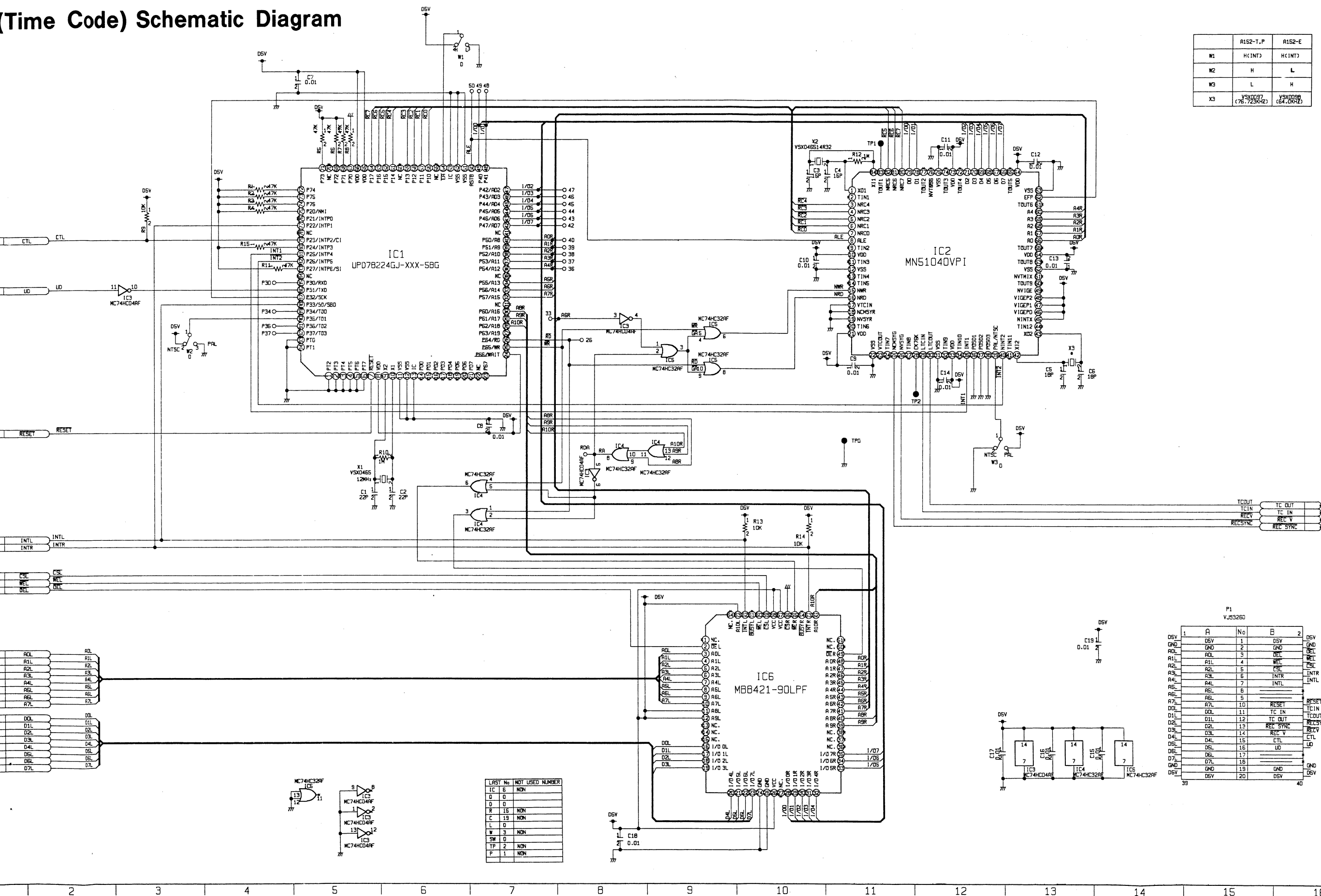
B(Time Code) P. C. BOARD

COMPONENT SIDE		FOIL SIDE	
Integrated Circuits		Integrated Circuits	
IC1	F-3	IC3	B-2
IC2	F-2	IC4	A-2
IC6	F-2	IC5	B-2
Test Points		Test Points	
TP1	E-2	TP1	A-3
TP2	F-2	TP2	C-3
Others			
P1	G-1		

B (Time Code) Schematic Diagram



(Time Code) Schematic Diagram



	A152-T.P	A152-E
W1	H(INT)	H(INT)
W2	H	L
W3	L	H
X3	YSX0097 (76-223KHZ)	YSX0098 (64.0KHZ)

P1 VJ55260				
1	A	No	B	2
DSV	DSV	1	DSV	DSV
QNL	QND	2	GND	QNL
P1L	ROL	3	DEL	DEL
A2L	R1L	4	WEL	WEL
A3L	A2L	5	CSL	CSL
A3L	A3L	6	INTR	INTR
A5L	A4L	7	INTL	INTL
A5L	A5L	8	=====	=====
A6L	A6L	5	=====	=====
A7L	A7L	10	RESET	RESET
D1L	D0L	11	TC IN	TCIN
D1L	D1L	12	TC OUT	TCOUT
D2L	D2L	13	REC SYNC	RECS
D3L	D3L	12	REC V	RECV
D4L	D4L	15	CTL	CTL
D5L	D5L	16	UD	UD
D6L	D6L	17	=====	=====
D7L	D7L	18	=====	=====
GND	GND	19	GND	GND
DSV	DSV	20	DSV	DSV

EXPLODED VIEWS AND REPLACEMENT PARTS LIST

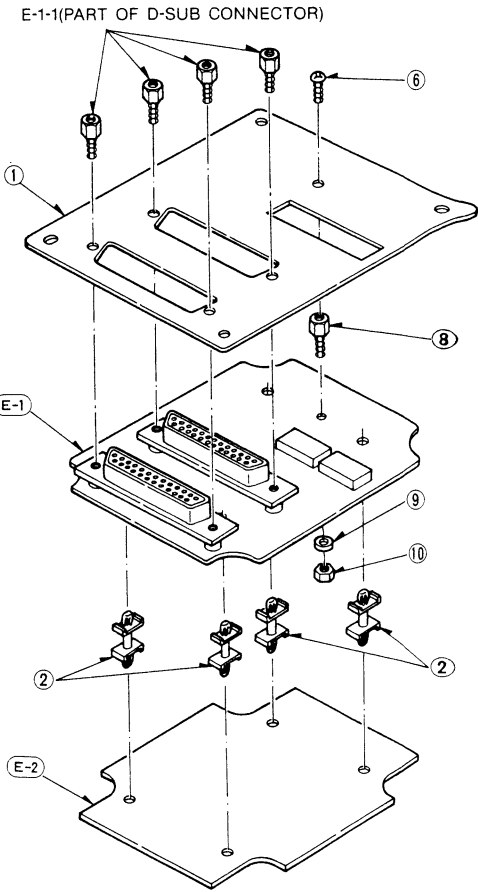
EXPLODED VIEWS

NOTES

1. ● Be sure to make your orders of replacement parts according to this list.
● "<R>" in Remark column indicates recommended parts.
● "<M>" in Remark column indicates needed in the periodical maintenance.
2. IMPORTANT SAFETY NOTICE
Components identified by "<I>" have special characteristics important for safety.
When replacing any of these components, use only the original ones.
Meaning of symbol "<I>" on this parts list is exactly the same as symbol ⚠ on Schematic and Circuit Board Diagrams.
3. Unless otherwise specified ;
All resistors are in (Ω), K=1,000Ω, M=1,000kΩ.
All capacitors are in (F), U=10⁻⁶ F, P=10⁻¹² F.
4. ITEM NUMBERS WITH CAPITAL LETTER E
Item numbers with capital letter E (Example:E1, E2,...) in Ref.No. column mean that the parts are listed with the E item numbers in the exploded views.
5. The main assembled parts are shown below C.B.A. marked with "■".
6. When ordering parts, use parts No. only form Part No. column.
7. Printed circuit board assembly with mark (NLA) is no longer available after discontinuation of the product.

8. Abbreviations for parts ;

-- NAME --	-- DESCRIPTION --
C.CAPACITOR	CERAMIC CAPACITOR
C.CAPACITOR CH	CERAMIC CHIP CAPACITOR
E.CAPACITOR	ELECTROLYTIC CAPACITOR
G.CAPACITOR	GLASS CAPACITOR
M.CAPACITOR	MICA CAPACITOR
P.CAPACITOR	PLASTIC FILM CAPACITOR
S.CAPACITOR	SEMI-CONDUCTOR CAPACITOR
T.CAPACITOR	TANTALUM CAPACITOR
TRIMMER	TRIMMER
C.RESISTOR	CARBON RESISTOR
F.RESISTOR	FUSE RESISTOR
M.RESISTOR	METAL OXIDE RESISTOR
M.RESISTOR CH	METAL OXIDE CHIP RESISTOR
S.RESISTOR	SOLID RESISTOR
V.RESISTOR	VARIABLE RESISTOR
W.RESISTOR	WIRE WOUND RESISTOR
COMBI. TR-R	TRANSISTOR-RESISTOR COMBINATION PARTS
COMBI. R-R	RESISTOR-RESISTOR COMBINATION PARTS
COMBI. C-R-L	CAPACITOR-COIL COMBINATION PARTS
C.B.A.	CIRCUIT BOARD ASSEMBLY



Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
1	VMP3439	PLATE	1	
2	VMX2088	C.B.A. HOLDER	4	
3	VQT4476	OPERATING INSTRUCTIONS	1	MULTI LANGUAGE
4	VPK1037	PACKING CASE	1	
5	VPN2445	CUSHION BAG	1	
6	XTV3+6FFZ	SCREW	4	
7	XTV3+8FFZ	SCREW	1	
8	VMS4890	SCREW	1	
9	XWA3B	WASHER	1	
10	XNG3CS	NUT	1	

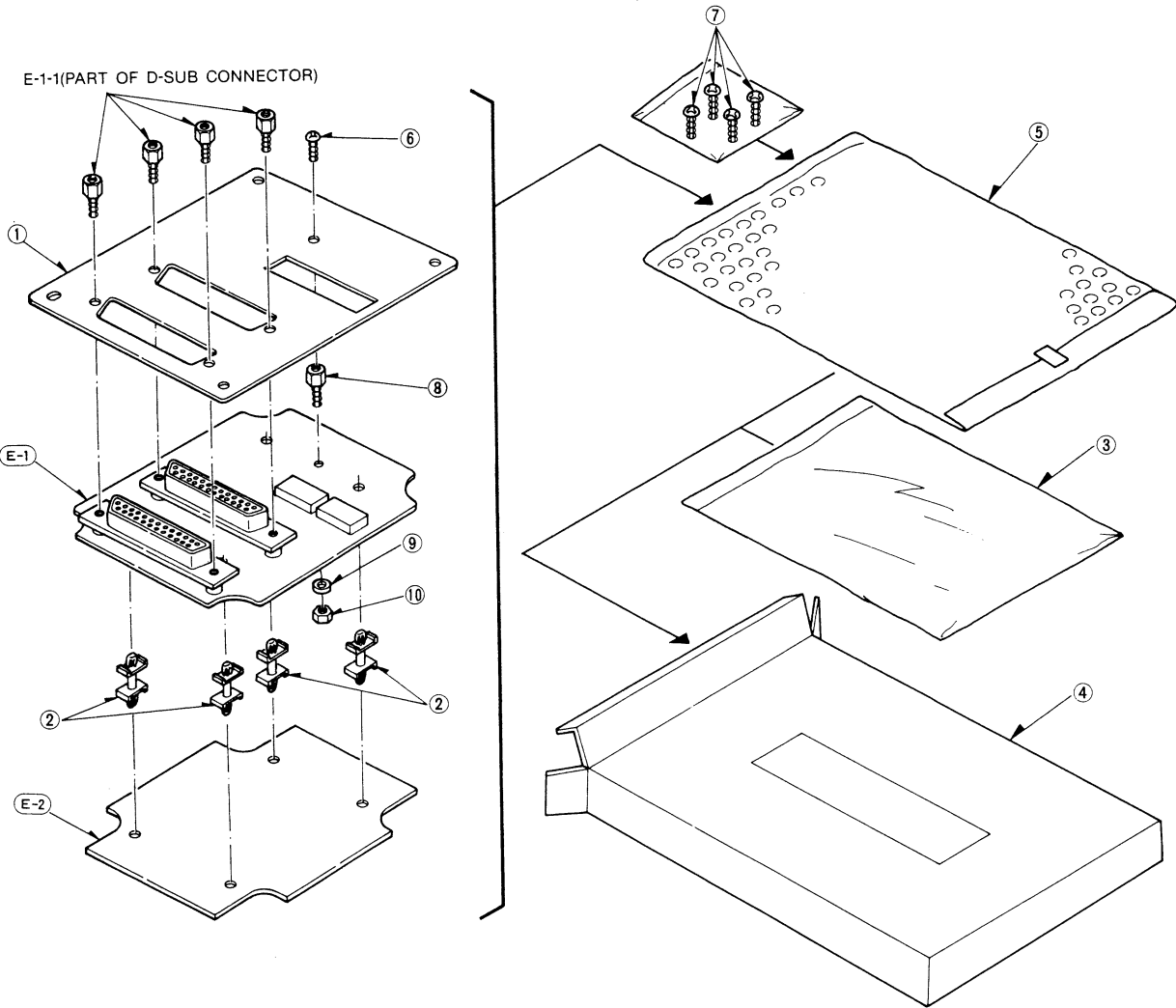
EXPLODED VIEWS AND REPLACEMENT PARTS LIST

NOTES

- 1. Be sure to make your orders of replacement parts according to this list.
- "<R>" in Remark column indicates recommended parts.
- "<M>" in Remark column indicates needed in the periodical maintenance.
- 2. IMPORTANT SAFETY NOTICE
- Components identified by "<I>" have special characteristics important for safety.
- When replacing any of these components, use only the original ones.
- Meaning of symbol "<I>" on this parts list is exactly the same as symbol Δ on Schematic and Circuit Board Diagrams.
- 3. Unless otherwise specified ;
- All resistors are in (Ω), K=1,000Ω, M=1,000kΩ.
- All capacitors are in (F), U=10⁻⁶ F, P=10⁻¹² F.
- 4. ITEM NUMBERS WITH CAPITAL LETTER E
- Item numbers with capital letter E (Example:E1, E2,...) in Ref.No. column mean that the parts are listed with the E item numbers in the exploded views.
- 5. The main assembled parts are shown below C.B.A. marked with "■".
- 6. When ordering parts, use parts No. only form Part No. column.
- 7. Printed circuit board assembly with mark (NLA) is no longer available after discontinuation of the product.

Abbreviations for parts ;	
-- NAME --	-- DESCRIPTION --
C.CAPACITOR	CERAMIC CAPACITOR
C.CAPACITOR CH	CERAMIC CHIP CAPACITOR
E.CAPACITOR	ELECTROLYTIC CAPACITOR
G.CAPACITOR	GLASS CAPACITOR
M.CAPACITOR	MICA CAPACITOR
P.CAPACITOR	PLASTIC FILM CAPACITOR
S.CAPACITOR	SEMI-CONDUCTOR CAPACITOR
T.CAPACITOR	TANTALUM CAPACITOR
TRIMMER	TRIMMER
C.RESISTOR	CARBON RESISTOR
F.RESISTOR	FUSE RESISTOR
M.RESISTOR	METAL OXIDE RESISTOR
M.RESISTOR CH	METAL OXIDE CHIP RESISTOR
S.RESISTOR	SOLID RESISTOR
V.RESISTOR	VARIABLE RESISTOR
W.RESISTOR	WIRE WOUND RESISTOR
COMBI. TR-R	TRANSISTOR-RESISTOR COMBINATION PARTS
COMBI. R-R	RESISTOR-RESISTOR COMBINATION PARTS
COMBI. C-R-L	CAPACITOR-COIL COMBINATION PARTS
C.B.A.	CIRCUIT BOARD ASSEMBLY

EXPLODED VIEWS



Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
1	VMP3439	PLATE	1	
2	VMX2088	C.B.A. HOLDER	4	
3	VQT4476	OPERATING INSTRUCTIONS	1	MULTI LANGUAGE
4	VPK1037	PACKING CASE	1	
5	VPN2445	CUSHION BAG	1	
6	XTV3-6FFZ	SCREW	4	
7	XTV3-8FFZ	SCREW	1	
8	VMS4890	SCREW	1	
9	XWA3B	WASHER	1	
10	XNG3CS	NUT	1	

Ref.No.
C1
C2
C3,C4
C5
C6,C7
C8,C9
C10,11
C14
C15
C16-18
C20
C22
C23
C24
D1-D3
DSW1,W2
IC1
IC2
IC3
IC4
IC5
IC6
IC7
L1,L2
L3-L9
L10,11
P1
P2
P3
P4
P6,P7
QR1
QR2

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
L1, L2	VLQ0319K101	COIL 100UH	2	
L3-L9	VLP0119	COIL	7	
L10, 11	VLP0119	COIL	2	
P1	VJP3195A040	CONNECTOR (MALE)	1	
P2	VJP1243T	CONNECTOR (MALE) 3P	1	
P3	VJP1244T	CONNECTOR (MALE) 4P	1	
P4	VJP1250T	CONNECTOR (MALE) 10P	1	
P6, P7	VJS3259	CONNECTOR (FEMALE)	2	
QR1	UN2215	TRANSISTOR-RESISTOR	1 <R>	
QR2	UN2216	TRANSISTOR	1 <R>	
R1-R9	ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	9	
R10, 11	ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	2	
R12	ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R13	ERJ6GEYJ681	M.RESISTOR CH 1/10W 680	1	
R14	ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R15	ERJ6GEYJ105	M.RESISTOR CH 1/10W 1M	1	
R16	ERJ6GEYJ821	M.RESISTOR CH 1/10W 820	1	
R17-20	ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	4	
R21	ERJ6GEYJ122	M.RESISTOR CH 1/10W 1.2K	1	
R22	ERJ6GEYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R23	ERJ6GEYJ824	M.RESISTOR CH 1/10W 820K	1	
R24, 25	ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	2	
R26	ERJ6GEYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R27	ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R28	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R29, 30	ERJ6GEYJ123	M.RESISTOR CH 1/10W 12K	2	
R31	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R32	ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	
R33-40	ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	8	
R42-46	ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	5	
R47	ERJ6GEYJ474	M.RESISTOR CH 1/10W 470K	1	
R48	ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	1	
RY1	VSY2069	RELAY	1	
X1	VSX04668R00	CRYSTAL OSCILLATOR	1 <R>	
	VEP66200A	P.C. BOARD W/COMPONENT NTSC B (TIME CODE)		AG-IA232TC-P ONLY
C1, C2	ECUM1H220JCN	C.CAPACITOR CH 50V 22P	2	
C3, C4	ECUM1H150JCN	C.CAPACITOR CH 50V 15P	2	
C5, C6	ECUM1H180JCN	C.CAPACITOR CH 50V 18P	2	
C7-C9	ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	3	
C10-19	ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	10	
IC1	UPD78224J573	IC	1 <R>	
IC2	MN51040VPI	IC	1 <R>	
IC3	MC74HC04AF	IC	1 <R>	
IC4, C5	MC74HC32AF	IC	2 <R>	
IC6	MB8421-90LFF	IC	1 <R>	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
P1	VJS3260	CONNECTOR (FEMALE)	1	
R1-R8	ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	8	
R9	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R10	ERJ6GEYJ105	M.RESISTOR CH 1/10W 1M	1	
R11	ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R12	ERJ6GEYJ105	M.RESISTOR CH 1/10W 1M	1	
R13,14	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	2	
R15	ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
X1	VSX0499	CRYSTAL OSCILLATOR	1 <R>	
X2	VSX0498	CRYSTAL OSCILLATOR	1 <R>	
X3	VSX0097	CRYSTAL OSCILLATOR	1 <R>	
	VEP66200B	P.C. BOARD W/COMPONENT PAL B (TIME CODE)		AG-IA23?TC-E ONLY
C1,C2	ECUM1H220JCN	C.CAPACITOR CH 50V 22P	2	
C3,C4	ECUM1H150JCN	C.CAPACITOR CH 50V 15P	2	
C5,C6	ECUM1H180JCN	C.CAPACITOR CH 50V 18P	2	
C7-C9	ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	3	
C10-19	ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	10	
IC1	UPD78224J573	IC	1 <R>	
IC2	MN5104OVPI	IC	1 <R>	
IC3	MC74HC04AF	IC	1 <R>	
IC4,C5	MC74HC32AF	IC	2 <R>	
IC6	MB8421-90LFF	IC	1 <R>	
P1	VJS3260	CONNECTOR(FEMALE)	1	
R1-R8	ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	8	
R9	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R10	ERJ6GEYJ105	M.RESISTOR CH 1/10W 1M	1	
R11	ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R12	ERJ6GEYJ105	M.RESISTOR CH 1/10W 1M	1	
R13,14	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	2	
R15	ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
X1	VSX0499	CRYSTAL OSCILLATOR	1 <R>	
X2	VSX0498	CRYSTAL OSCILLATOR	1 <R>	
X3	VSX0098	CRYSTAL OSCILLATOR	1 <R>	

WARNING
This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products deal with in this service manual by anyone else could result in serious injury or death.

Order No. VSD9501S287
D1

Service Manual

Supplement

PAL / NTSC

Video Product

Subject: Change of Microcomputer

Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.	Effective from
AG-IA232TCP	6	VSD9109M211	E4 - - -
AG-IA232TCE <i>VSD942</i>	5	VSD9109M614	E4 - - -

Board :

Reason for Change

- ☐ The following part(s) has(have) been changed for serviceability improvement.
☐ The following part(s) has(have) been changed for productivity improvement.
☒ The following part(s) has(have) been changed for standardization.
☐ The following part(s) has(have) been changed for the safety regulation.
☐

Interchangeability Code (I/C)

A	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.	B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.	D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other		

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
IC1	UPD78224J578	UPD78224J603	IC	1	A	

SE2-0641

Panasonic

© 1995 Matsushita Electric Industrial Co., Ltd. All rights reserved.
Unauthorized copying and distribution is a violation of law.

Printed in Japan

! Warning

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service manual by anyone else could result in serious injury or death.

Order No. VSD9506S212
D1,D2,D4

Service Manual

Supplement

NTSC / PAL

Video Product

Subject : Change of IC

Please use this supplement together with the Service Manual as follows :

Model No.	Bulletin No.	Order No.	Effective from
AG-IA232TC-P	7	VSD9109M211	'95 Running change
AG-5700-P	18	VSD9110M213	'95 Running change
AG-IA670P	3	VSD9210M228	'95 Running change
AG-6760P	32	VSD9210M227	'95 Running change
AG-A570P	1	VSD9205M221	'95 Running change
AG-7530RP	14	VSD9203M216	'95 Running change
AG-7355RP	14	VSD9203M216	'95 Running change
AG-IA823P	2	VSD9403M247	'95 Running change
AG-A570E/B	2	VSD9205M623	'95 Running change
AG-IA232TC-E <i>V49 012</i>	6	VSD9109M614	'95 Running change
AG-IA670E	2	VSD9210M627	'95 Running change
AG-5700-E	16	VSD9202M619	'95 Running change

Reason for Change

- ☐ The following part(s) has(have) been changed for serviceability improvement.
- ☐ The following part(s) has(have) been changed for productivity improvement.
- ☒ The following part(s) has(have) been changed for standardization.
- ☐ The following part(s) has (have) been changed for the safety regulation.
- ☐

Interchangeability Code (I/C)

A	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.
B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.
D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Others

Part Number		Part Name & Descriptions		Pcs	I/C	Remarks
Ref. No.	Original Part No.	New Part No.				
IC102,5 IC3	UPD4711AGS	UPD4711BGS	IC	2	A	AG-A570P, AG-A570E/B AG-7350RP, AG-7355RP, AG-IA232TC-P, AG-IA232TC-E
	UPD4711AGS	UPD4711BGS	IC	1	A	
IC6504	UPD4711AGS	UPD4711BGS	IC	1	A	AG-IA823P
IC6904	UPD4711AGS	UPD4711BGS	IC	1	A	AG-6760P, AG-IA670P, AG-IA670E
IC3	UPD4711AGS	UPD4711BGS	IC	1	A	AG-5700-P, AG-5700-E

SE2-0712

Panasonic

© 1995 Matsushita Electric Industrial Co., Ltd. All rights reserved.
Unauthorized copying and distribution is a violation of law.